

# Level Monitor III

Owner's Manual

PNEG-1151

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**All information, illustrations, photos and specifications in this manual are based on the latest information available at the time of publication. The right is reserved to make changes at any time without notice.**

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### Safety Guidelines

Safety guidelines are general-to-specific safety rules that must be followed at all times. This manual is written to help you understand safe operating procedures and problems that can be encountered by the operator and other personnel when using this equipment. Save these safety guidelines for future reference.

As owner or operator, you are responsible for understanding the requirements, hazards, and precautions that exist and to inform others as required. Unqualified persons must stay out of the work area at all times.

Alterations must not be made to the equipment. Alterations can produce dangerous situations resulting in **SERIOUS INJURY** or **DEATH**.

This equipment must be installed in accordance with the current installation codes and applicable regulations, which must be carefully followed in all cases. Authorities having jurisdiction must be consulted before installations are made.

When necessary, you must consider the installation location relative to electrical, fuel and water utilities.

Personnel operating or working around equipment must read this manual. This manual must be delivered with equipment to its owner. Failure to read this manual and its safety instructions is a misuse of the equipment.

**ST-0001-3**

## Cautionary Symbols Definitions

Cautionary symbols appear in this manual and on product decals. The symbols alert the user of potential safety hazards, prohibited activities and mandatory actions. To help you recognize this information, we use the symbols that are defined below.



This symbol indicates an imminently hazardous situation which, if not avoided, **will result in serious injury or death.**



This symbol indicates a potentially hazardous situation which, if not avoided, **can result in serious injury or death.**



This symbol indicates a potentially hazardous situation which, if not avoided, **can result in minor or moderate injury.**



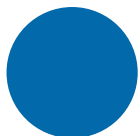
This symbol is used to address practices not related to personal injury.



This symbol indicates a general hazard.



This symbol indicates a prohibited activity.



This symbol indicates a mandatory action.

ST-0005-2

## Safety Cautions

### Use Personal Protective Equipment

- Use appropriate personal protective equipment:

**Eye Protection**



**Respiratory Protection**



**Foot Protection**



**Hearing Protection**



**Head Protection**



**Fall Protection**



**Hand Protection**



- Wear clothing appropriate to the job.
- Remove all jewelry.
- Tie long hair up and back.

ST-0004-1

### Follow Safety Instructions

- Carefully read all safety messages in this manual and safety signs on your machine. Keep signs in good condition. Replace missing or damaged safety signs. Be sure new equipment components and repair parts include the current safety signs. Replacement safety signs are available from the manufacturer.
- Learn how to operate the machine and how to use controls properly. Do not let anyone operate without instruction.
- If you do not understand any part of this manual or need assistance, contact your dealer.



ST-0002-1

### Maintain Equipment and Work Area

- Understand service procedures before doing work. Keep area clean and dry.
- Never service equipment while it is operating. Keep hands, feet, and clothing away from moving parts.
- Keep your equipment in proper working condition. Replace worn or broken parts immediately.



ST-0003-1

### Install and Operate Electrical Equipment Properly

- Electrical controls must be installed by a qualified electrician and must meet the standards set by applicable local codes (National Electrical Code for the US, Canadian Electric Code, or EN60204 along with applicable European Directives for Europe).
- Lock-out power source before making adjustments, cleaning, or maintaining equipment.
- Make sure all equipment and bins are properly grounded.



ST-0075-1







**Failure to follow these safety instructions may result in equipment damage, personal injury or death.**

1. Disconnect all power before servicing. Have bin properly grounded.  
**NOTE:** *There may be more than one power supply in the Level Monitor III.*
2. All wiring should be done according to the local code and the national electric code and by a qualified electrician.
3. Ground electrical boxes and equipment for personal safety.
4. Keep all electrical boxes closed while applying power.
5. Read and understand the owner's manual.

### Specifications

1. 115 Volt 60 HZ input power.
2. 5 Amp - 1/8 HP - 120 Volt AC maximum controlled circuit current.

### 3. Installation and Operation

## Level Monitor III Operation

The Level Monitor III can be used in many different applications. A capacitive sensor is incorporated with a relay to provide an isolated relay contact output. Common (C), normally open (N.O.) and normally closed (N.C.). There is a red indicator light that will be ON when the sensor is covered. This can be used to detect if grain is above or below the monitor. The toggle switch can be used to bypass the relay contact outputs. In BYPASS position, both the N.O. and N.C. are closed to C. In ON position only the N.O. and C are closed when the sensor is covered and only the N.C. and C are closed when the sensor is not covered.

## Field Testing the Level Monitor III

**Have all people clear of operating equipment before the test.**

With the 115 VAC turned ON and the monitor switched to ON position and the sensor not covered, the C and N.O. will be open. Place your hand on the sensor. This will close the C and N.O. and light the red indicator light. Remove your hand and all will return to normal.

## Monitor III Installation

1. Drill a 1-3/4" diameter hole at the location desired. Use the box as a hole guide. Mark and drill 5/16" holes through the plastic box where the bin ribs touch the box. Mark the holes on the bin. Then remove the box and drill through the bin. The nuts must be on the inside of the bin. (See Figure 3A.)
2. Mount the Level Monitor III to the outside of the bin using the two 1/4" x 1-1/4" bolts, lock washers, and nuts. Ensure that the neoprene seal is between the Level Monitor box and the bin wall. If the location of the Level Monitor is where a Stir-Ator auger might catch the capacitive sensor, install a guard (4). (See Figure 3A.)

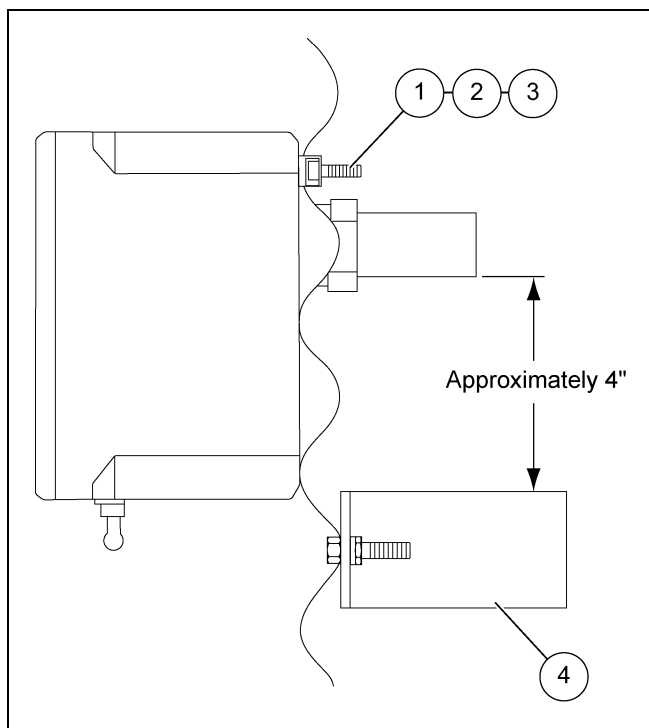


Figure 3A

Ref #	Part #	Description	Qty
1	2FH0806	Hex Bolt, 1/4" x 1-1/4"	4
2	1FH0763	Hex Nut, 1/4"	4
3	3FH0789	Lock Washer, 1/4"	4
4	205C002	Auger Guard	1

## AC Power

1. A 115 Volt AC will be hooked to the terminal strip marked (N) and (L1). Connect the ground wire to the bin mounting bolt. (See Figure 3B.)
2. A 115 Volt AC is available in the Grain Flow control box on terminal 1 and 2 (Take-away auger control). **Do not use the 115 Volt for the chart recorder to power the Level Monitor.** See wiring diagram on Page 14.

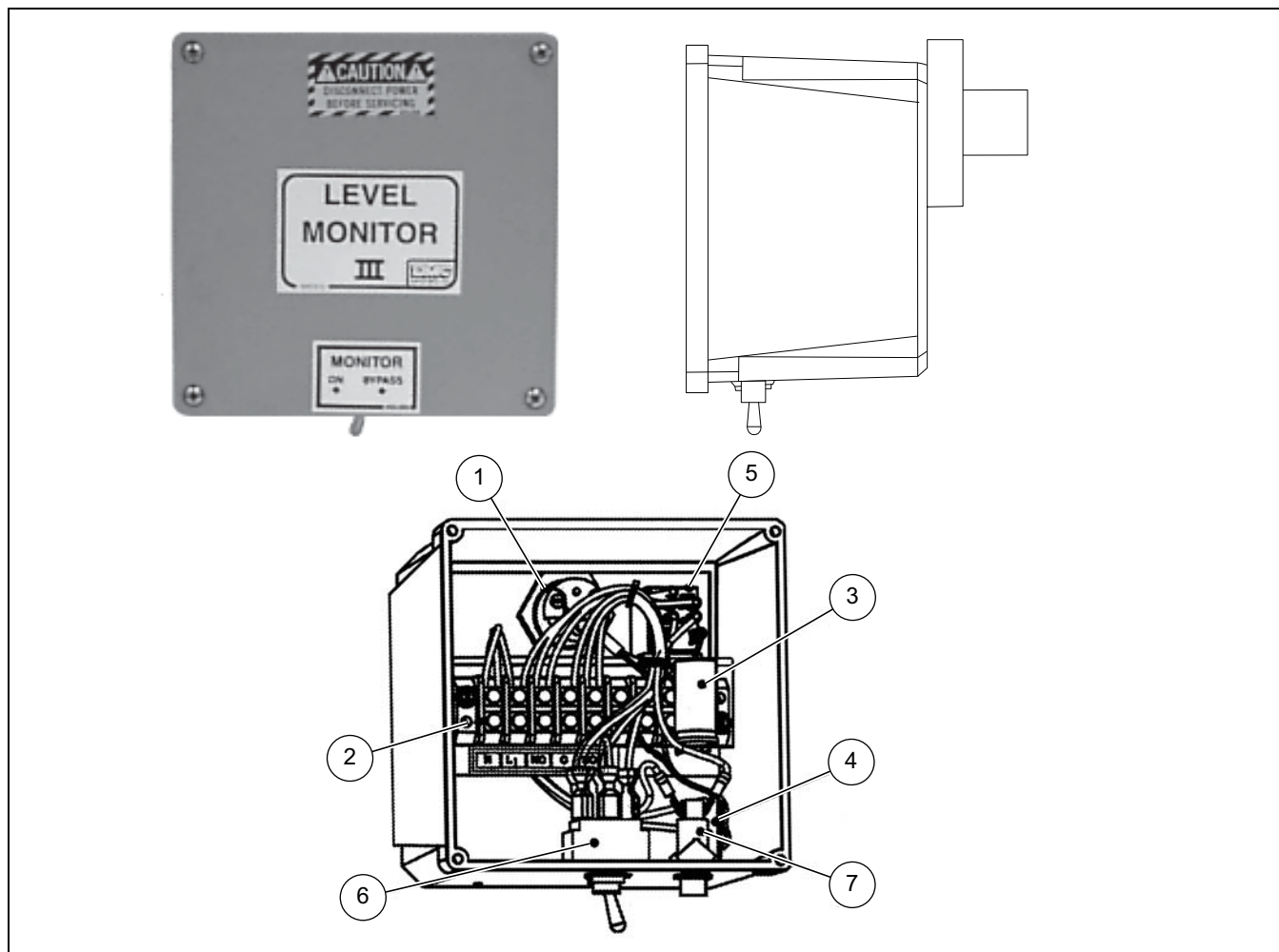


Figure 3B

Ref #	Part #	Description
1	4051021	Proximity Switch - DC (1EL1566 Preset by GSI)
2	1EL0899	Terminal Block - DBL (CSA) 9 Terminal 30 Amp, 250V
3	1EL1077	Capacitor - 4700 UF, 25V. SU Series
4	2EL0225	12V Power Supply - Wallmount (OEM #45-750)
5	2EL0274	Relay - Gen. Purpose (CSA) Model LY, DPDT, 12 VDC
6	2EL0617	Switch - Toggle, DPDT, ON-OFF, Spade
7	2EL1161	Light - Indicator, Red (CSA) Neon, (Amp 380627-2)

### 3. Installation and Operation

## Alarm or Signal Hook-Up

The relay, which is within the monitor, has contacts rated for 5 Amps. Do not hook-up any alarm or signal load that exceeds 5 Amps. The common (C), normally open (N.O.) and normally closed (N.C.) contacts are on the terminal strip. If your alarm or signal load exceeds 5 amps, use a separate contactor, controlled by the C, N.O., or N.C. contacts in the Level Monitor.

## Electrical Hook-Up Level Monitor Used for Bin Empty with the Grain Flow

(The Level Monitor is located 2' above the drying floor.)

Locate Auger Overload Switch terminals #4 and #5 on the terminal strip at the bottom of the Grain Flow control box back panel. Connect the Level Monitor in series with the auger overload by removing the auger overload wire from terminal #5. Use a wire nut to connect a wire from the auger overload switch wire to the "N.O." (normally open) terminal in the Level Monitor. Attach one end of another wire to the "C" (common) terminal in the Level Monitor and the other end to terminal #5 in the Grain Flow. Other equipment used to control the Grain Flow should be wired in series with this circuit in a similar way. (See Figure 3C.)

**NOTE:** Use the normally open and common (N.O. and C) when using the level monitor as a bin empty switch (as drawn). Use the normally closed and common when used as a bin full switch.



**If the AC power is not provided to the level monitor, it will signal as covered with grain.**

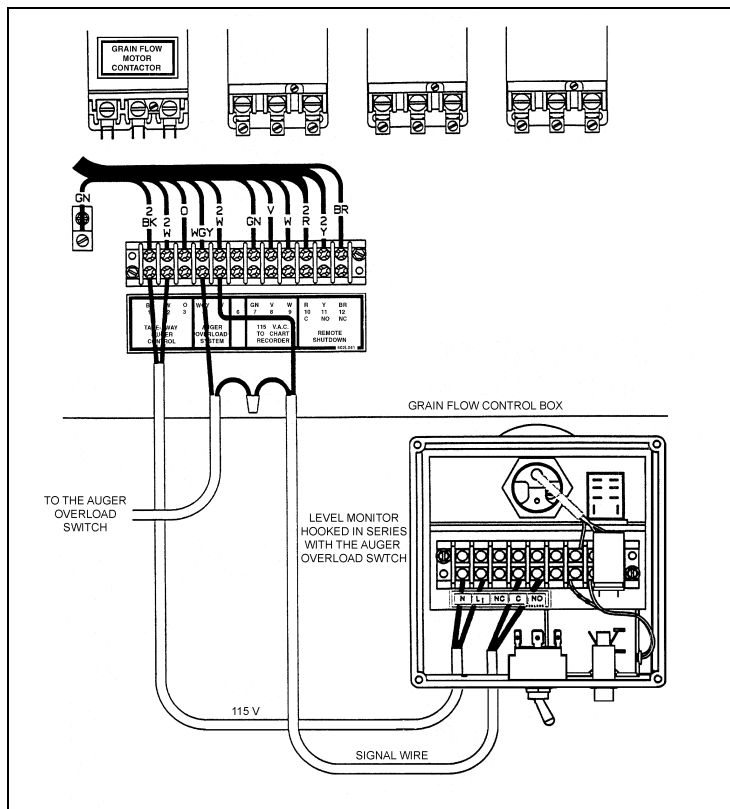


Figure 3C Electrical Hook-Up for Level Monitor to a Grain Flow

## Electrical Hook-Up Level Monitor to Control Stir-Ator Above a Grain Flow

(The Level Monitor is located 6' above the drying floor.)

You must have an unused contactor in the Grain Flow control box to use as a power source for the Stir-Ator.

1. Connect the power wires from the Stir-Ator switch box to the unused contactor terminals.
2. Remove the orange wire from the bottom of the third take-away auger switch and insulate. From this switch terminal run a wire to the "C" on the Level Monitor. Put a jumper from the N.O. to L1 on the terminal strip in the Level Monitor. (See Figure 3D.)

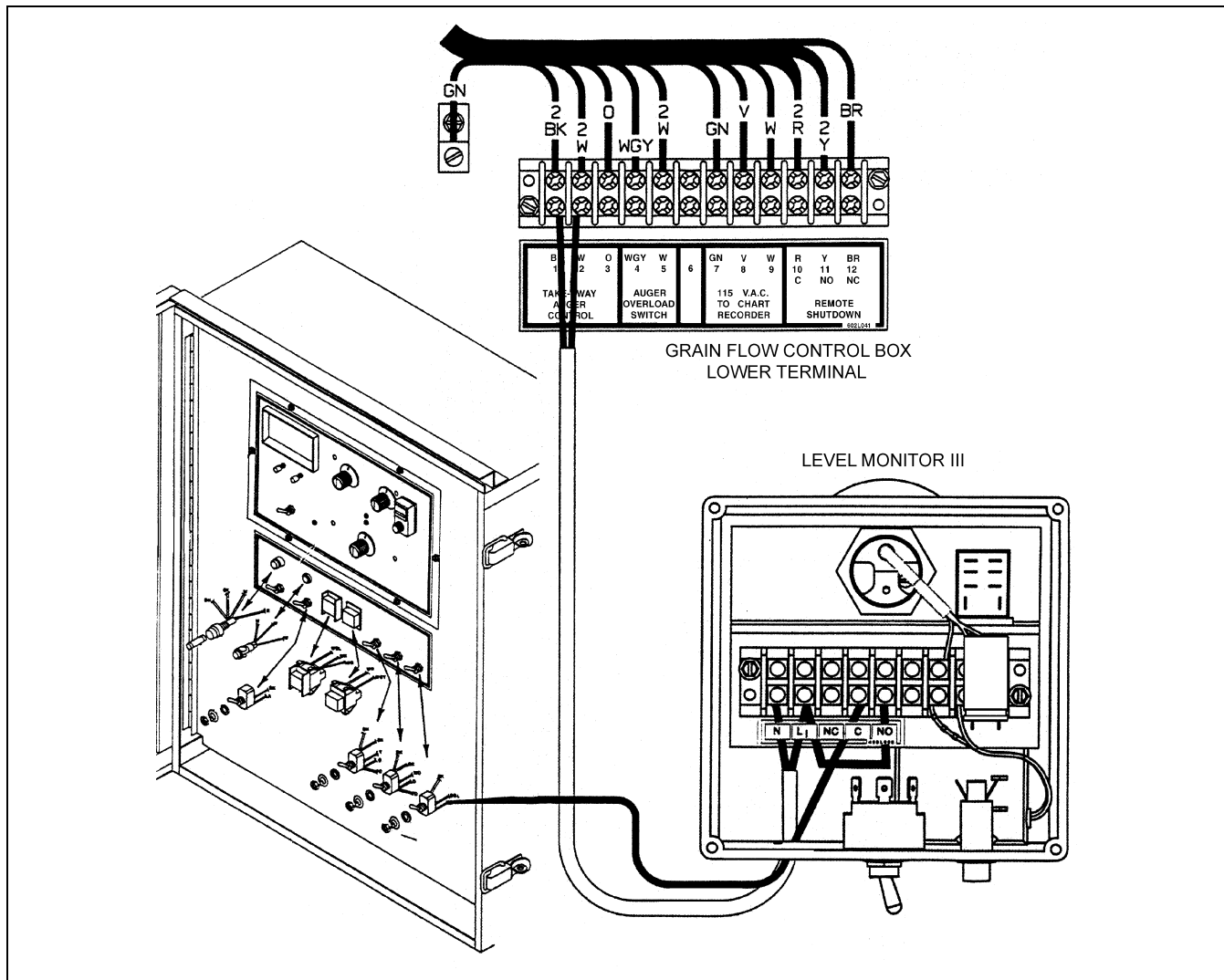


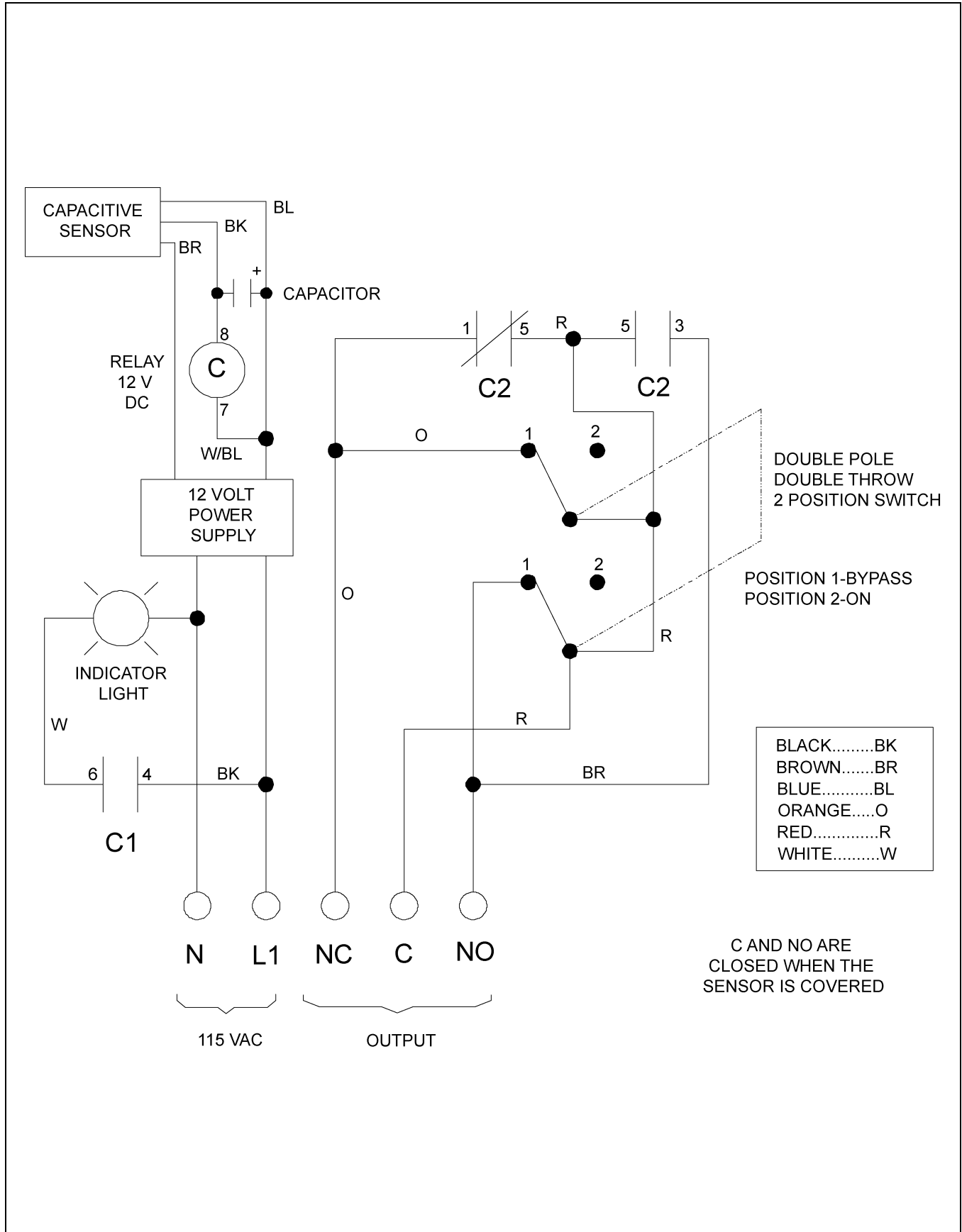
Figure 3D Electrical Hook-Up for Level Monitor to a Grain Flow

## Operation

When the third toggle switch is in "Automatic" position, the Stir-Ator will run when the grain is covering the Level Monitor proximity switch. The Stir-Ator will be OFF when the grain is lower than the Level Monitor. When the third switch is in "Manual" position, the Stir-Ator will run continuously. In the "OFF" position, the Stir-Ator will not run.

## 4. Wiring Diagram

### Level Monitor III Wiring Diagram



## GSI Group, LLC Limited Warranty

The GSI Group, LLC ("GSI") warrants products which it manufactures to be free of defects in materials and workmanship under normal usage and conditions for a period of 12 months after sale to the original end-user or if a foreign sale, 14 months from arrival at port of discharge, whichever is earlier. The end-user's sole remedy (and GSI's only obligation) is to repair or replace, at GSI's option and expense, products that in GSI's judgment, contain a material defect in materials or workmanship. Expenses incurred by or on behalf of the end-user without prior written authorization from the GSI Warranty Group shall be the sole responsibility of the end-user.

### Warranty Extensions:

The Limited Warranty period is extended for the following products:

	Product	Warranty Period	
<b>AP Fans and Flooring</b>	Performer Series Direct Drive Fan Motor	3 Years	* Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 25% 5 to 7 years - end-user pays 50% 7 to 10 years - end-user pays 75%
	All Fiberglass Housings	Lifetime	
	All Fiberglass Propellers	Lifetime	
<b>AP and Cumberland</b>	Flex-Flo/Pan Feeding System Motors	2 Years	
<b>Cumberland Feeding/Watering Systems</b>	Feeder System Pan Assemblies	5 Years **	** Warranty prorated from list price: 0 to 3 years - no cost to end-user 3 to 5 years - end-user pays 50%
	Feed Tubes (1-3/4" and 2.00")	10 Years *	
	Centerless Augers	10 Years *	
	Watering Nipples	10 Years *	
<b>Grain Systems</b>	Grain Bin Structural Design	5 Years	
<b>Grain Systems Farm Fans Zimmerman</b>	Portable and Tower Dryers	2 Years	† Motors, burner components and moving parts not included. Portable dryer screens included. Tower dryer screens not included.
	Portable and Tower Dryer Frames and Internal Infrastructure †	5 Years	

GSI further warrants that the portable and tower dryer frame and basket, excluding all auger and auger drive components, shall be free from defects in materials for a period of time beginning on the twelfth (12<sup>th</sup>) month from the date of purchase and continuing until the sixtieth (60<sup>th</sup>) month from the date of purchase (extended warranty period). During the extended warranty period, GSI will replace the frame or basket components that prove to be defective under normal conditions of use without charge, excluding the labor, transportation, and/or shipping costs incurred in the performance of this extended warranty.

### Conditions and Limitations:

THERE ARE NO WARRANTIES THAT EXTEND BEYOND THE LIMITED WARRANTY DESCRIPTION SET FORTH ABOVE. SPECIFICALLY, GSI MAKES NO FURTHER WARRANTY OF ANY KIND, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE IN CONNECTION WITH: (I) PRODUCT MANUFACTURED OR SOLD BY GSI OR (II) ANY ADVICE, INSTRUCTION, RECOMMENDATION OR SUGGESTION PROVIDED BY AN AGENT, REPRESENTATIVE OR EMPLOYEE OF GSI REGARDING OR RELATED TO THE CONFIGURATION, INSTALLATION, LAYOUT, SUITABILITY FOR A PARTICULAR PURPOSE, OR DESIGN OF SUCH PRODUCTS.

GSI shall not be liable for any direct, indirect, incidental or consequential damages, including, without limitation, loss of anticipated profits or benefits. The sole and exclusive remedy is set forth in the Limited Warranty, which shall not exceed the amount paid for the product purchased. This warranty is not transferable and applies only to the original end-user. GSI shall have no obligation or responsibility for any representations or warranties made by or on behalf of any dealer, agent or distributor.

GSI assumes no responsibility for claims resulting from construction defects or unauthorized modifications to products which it manufactured. Modifications to products not specifically delineated in the manual accompanying the equipment at initial sale will void the Limited Warranty.

This Limited Warranty shall not extend to products or parts which have been damaged by negligent use, misuse, alteration, accident or which have been improperly/inadequately maintained. This Limited Warranty extends solely to products manufactured by GSI.

Prior to installation, the end-user has the responsibility to comply with federal, state and local codes which apply to the location and installation of products manufactured or sold by GSI.

This equipment shall be installed in accordance with the current installation codes and applicable regulations, which should be carefully followed in all cases. Authorities having jurisdiction should be consulted before installations are made.



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